



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
24.10.2012 Bulletin 2012/43

(51) Int Cl.:
A61K 39/395 (2006.01) **A61P 35/02** (2006.01)
A61P 35/04 (2006.01) **C07K 16/28** (2006.01)

(43) Date of publication A2:
14.12.2011 Bulletin 2011/50

(21) Application number: **11005763.5**

(22) Date of filing: **03.02.2005**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

(71) Applicant: **Elan Pharmaceuticals Inc.**
South San Francisco, CA 94080 (US)

(30) Priority: **06.02.2004 US 541946**

(72) Inventor: **Wehner, Nancy**
Fremont,
California 94536 (US)

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
05712339.0 / 1 718 310

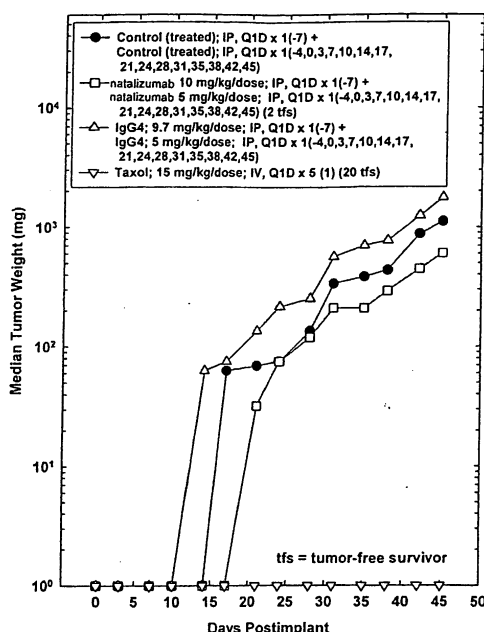
(74) Representative: **Schüssler, Andrea**
Patentanwälte Huber & Schüssler
Truderinger Strasse 246
81825 München (DE)

(54) **Methods and compositions for treating tumors and metastatic disease**

(57) Compositions, methods, and combination therapies for the treatment of lymphomas, leukemias, melanomas, prostate cancer, and metastatic disease are provided. Specifically, compositions comprising anti- $\alpha 4$ integrin immunoglobulins or immunoglobulins that bind to an $\alpha 4$ integrin ligand (e.g., MadCAM-1 and VCAM-1)

are disclosed for use in inhibiting tumor growth and progression and inhibition of metastases. A preferred immunoglobulin for use in treating tumors and metastases is natalizumab. The compositions and methods using these immunoglobulins can be used alone or in combination with other reagents and cancer treatment modalities.

Response of SC MOLT-4 Leukemia Xenografts to Treatment with natalizumab, IgG4, and Taxol





EUROPEAN SEARCH REPORT

Application Number
EP 11 00 5763

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 03/019136 A (UNIV CALIFORNIA [US]; VARNER JUDITH A [US]) 6 March 2003 (2003-03-06)	1-21	INV. A61K39/395 A61P35/02 A61P35/04 C07K16/28
Y	* page 3, paragraph 5 - page 9, paragraph 4 * * page 19, paragraph 4 - page 23, paragraph 1 * * page 63 - page 66; examples 6-11 * * page 70 - page 71; example 19 * * claims 1-102 * * figure 22 *	1-21	
X	----- MATSUNAGA TAKUYA ET AL: "Interaction between leukemic-cell VLA-4 and stromal fibronectin is a decisive factor for minimal residual disease of acute myelogenous leukemia", NATURE MEDICINE, NATURE PUBLISHING GROUP, NEW YORK, NY, US, vol. 9, no. 9, 3 August 2003 (2003-08-03), pages 1158-1165, XP002378839, ISSN: 1078-8956 * the whole document *	1-21	
X	----- US 2002/022028 A1 (MUNDY GREGORY R [US] ET AL) 21 February 2002 (2002-02-21) * page 2, paragraph 13 - paragraph 16 * * page 12, paragraphs 111,112,116,117 * * figures 4,6 * ----- -/--	1-3,11	TECHNICAL FIELDS SEARCHED (IPC) A61K A61P C07K
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 September 2012	Examiner Nyeki, Agnes
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			

2

EPO FORM 1503 03/02 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
EP 11 00 5763

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	MARCO REX A W ET AL: "Alpha 4 integrin increases anoikis of human osteosarcoma cells.", JOURNAL OF CELLULAR BIOCHEMISTRY 1 APR 2003, vol. 88, no. 5, 1 April 2003 (2003-04-01), pages 1038-1047, XP002520504, ISSN: 0730-2312 * abstract * * page 1043, right-hand column, paragraph 2 - page 1044, left-hand column, paragraph 2; figure 6 *	1-3,16	
Y	----- SORBERA L A ET AL: "Natalizumab. Treatment of IBD, treatment of multiple sclerosis: AN100226, AntegrenTM", DRUGS OF THE FUTURE, PROUS SCIENCE, ES, vol. 25, no. 9, 1 September 2000 (2000-09-01), pages 917-921, XP002352328, ISSN: 0377-8282 * the whole document * -----	1-21	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
Place of search Munich		Date of completion of the search 18 September 2012	Examiner Nyeki, Agnes
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	

 2
EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 00 5763

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-09-2012

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03019136	A	06-03-2003	AU 2002356180 A1	10-03-2003
			CA 2494870 A1	06-03-2003
			EP 1423135 A2	02-06-2004
			US 2005129681 A1	16-06-2005
			WO 03019136 A2	06-03-2003

US 2002022028	A1	21-02-2002	AT 418999 T	15-01-2009
			AU 757873 B2	06-03-2003
			AU 6248699 A	03-04-2000
			BR 9913705 A	05-06-2001
			CA 2343579 A1	23-03-2000
			CN 1321091 A	07-11-2001
			CZ 20010916 A3	15-08-2001
			DK 1113810 T3	06-04-2009
			EE 200100146 A	17-06-2002
			EP 1113810 A2	11-07-2001
			EP 2065050 A1	03-06-2009
			ES 2319831 T3	12-05-2009
			HK 1038313 A1	22-05-2009
			HU 0103630 A2	28-01-2002
			IS 5856 A	23-02-2001
			JP 2002524529 A	06-08-2002
			JP 2010235620 A	21-10-2010
			NO 20011244 A	14-05-2001
			NZ 511062 A	29-04-2003
			PL 347128 A1	25-03-2002
			PT 1113810 E	10-03-2009
			SI 1113810 T1	30-04-2009
			SK 6052001 A3	03-12-2001
			TR 200100734 T2	23-07-2001
			US 2002022028 A1	21-02-2002
			WO 0015247 A2	23-03-2000
			ZA 200102032 A	07-11-2002
